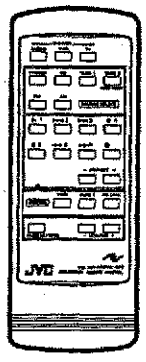
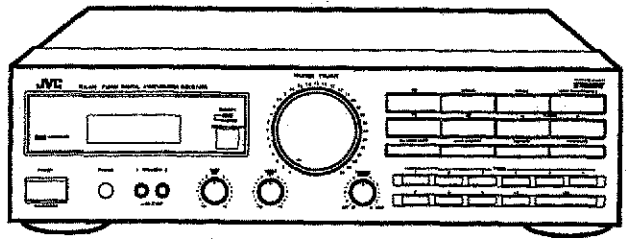
RX-308BK
RX-309TN

JVC

STEREO RECEIVER

RX-308BK
RX-309TN





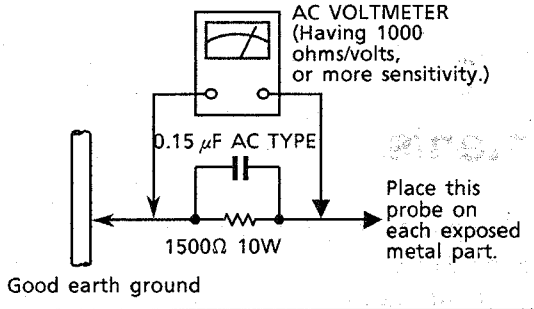
COMPU LINK
Remote
Control Component

Note : RX-398BK and RX-309TN are completely the same in their structure.except for their outlook colours.

No.20375
Dec.1992

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute repalcement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, contorl shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor.
     Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

Introduction

Thank you for purchasing the JVC RX-309TN receiver. We hope it will be a valued addition to your audio system. Be sure to read these instructions carefully before installing and operating the receiver.

Features

- Monitor recording quality
- Surround feature with two or four speakers
- Remote control
- Preset radio stations
- Easy to use

About This Manual

This manual gives you the basic information you need to install and use your receiver. It explains everything you need to know from turning the power switch on to basic troubleshooting. Please consult your JVC dealer if you have further questions about the receiver.

The following conventions are used in this manual:

- Controls, buttons, and connection points on the back of the receiver are indicated with capital letters, like this: POWER button, AUDIO jacks
- Messages that appear on the display window are indicated with capital letters and in quotes, like this: "TUNED"
- Instructions that you need to follow to get the correct results are labeled ***IMPORTANT!***
- Helpful information is labeled ***NOTE:***
- To avoid electric shock to yourself or damage to the receiver, read the information labeled ⚠ **CAUTION!**

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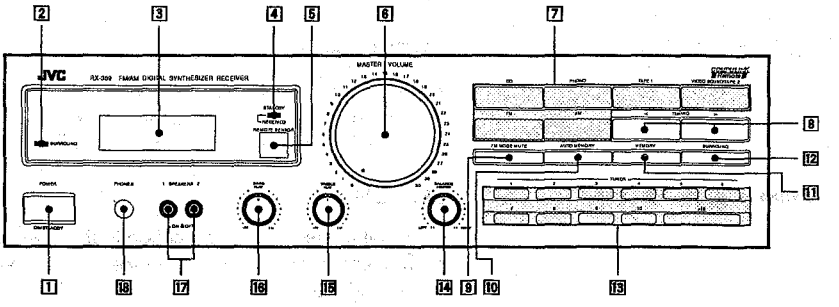
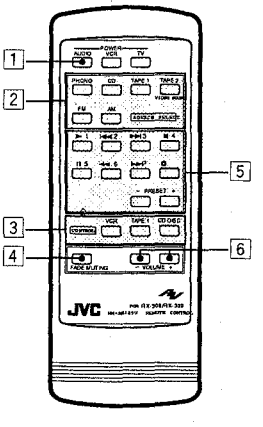
Switches and Controls

Familiarize yourself with the main switches and controls on your JVC RX-309TN receiver.



Receiver

1. POWER switch
2. SURROUND indicator
3. Display window
4. RECEIVED/POWER STANDBY indicator
5. REMOTE SENSOR window
6. MASTER VOLUME control
7. SOURCE selector buttons
8. TUNING buttons
9. FM MODE-MUTE button
10. AUTO MEMORY button
11. MEMORY button
12. SURROUND button
13. TUNER buttons
14. BALANCE control
15. TREBLE control
16. BASS control
17. SPEAKERS buttons
18. PHONES jack



Remote Control

1. POWER switch
2. SOURCE SELECT buttons
3. CONTROL buttons
4. FADE MUTING button
5. Buttons for operating components
6. VOLUME adjuster

Installation

This section explains how to connect the receiver to other stereo equipment and speakers, and how to connect the power supply.

⚠ Cautions

Before Installation

⚠ **CAUTION!** Before installing your receiver:

- Make sure your hands are dry.
- Turn the power off to all components.
- Read the installation instructions for all components you are going to connect.

Positioning the Receiver

⚠ **CAUTION!**

- Install the receiver in a location that is level and protected from moisture.
- The temperature around the receiver must be between 23° and 104° F (–5° and 40° C).
- Make sure there is good ventilation around the receiver. Poor ventilation could cause overheating and damage the receiver.

Making Power Connections

⚠ **CAUTION!**

- Do not handle the power cord with wet hands.
- Do not pull on the power cord to unplug the receiver. Always grab the plug directly so as not to damage the cord.

Handling the Receiver

⚠ **CAUTION!**

- Do not insert any metal object into the receiver.
- Do not disassemble the receiver or remove screws, covers, or cabinet.
- Do not expose the receiver to rain or moisture.

Connecting Stereo Components

Before Starting

Before connecting the receiver, read the following paragraphs carefully.

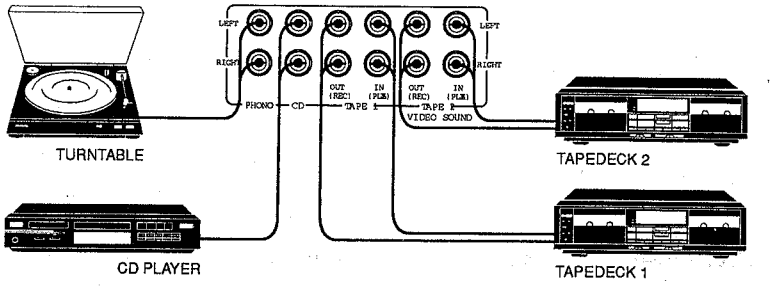
IMPORTANT! *The left channel of any audio component must be connected to the left-channel jack of the receiver, and the right channel to the right-channel jack. If they are reversed, the stereophonic image will not be correct.*

NOTE: *To ensure correct connections, insert the red plug into the right channel.*

Basic Connections

Connect stereo componentz to the amplifier using cables with RCA PIN plugs. Connect the output jacks on a tape deck to the jacks marked IN (PLAY) on the amplifier, and the input jacks to those marked OUT (REC).

NOTE: *Any turntables incorporating a small-output cartridge such as an MC (moving-coil type) must be connected to this amplifier through a commercial head amplifier or step-up transformer. Direct connection may result in insufficient volume.*

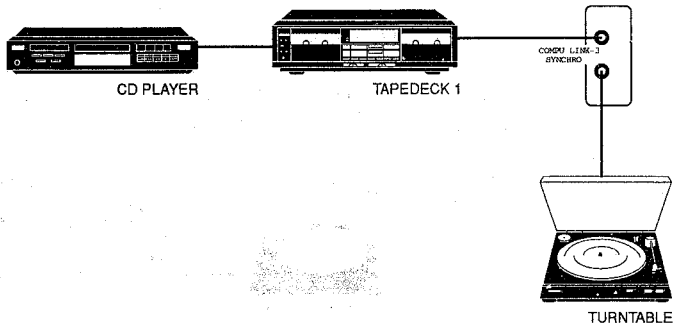


COMPU LINK-3 Connections

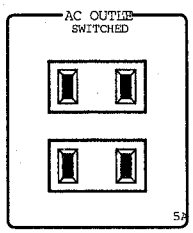
COMPU LINK-3 SYNCHRO jacks on the back of the receiver connect the COMPU LINK remote control system. This system connects other JVC audio components with the receiver to make listening and recording more convenient. To use this system, attach the cables provided with your JVC components to the COMPU LINK-3 SYNCHRO jacks on the rear panel of each component. Then connect the cables to the receiver.

NOTES:

- *COMPU LINK-3 is an upgraded version of COMPU LINK-1. If your equipment provides COMPU LINK-1 jacks, you can still connect your equipment, but slight imperfections may result. Automatic Power ON/OFF, for example, may not always function properly.*
- *Refer to page 18 for details about the COMPU LINK remote control system.*
- *COMPU LINK does not work on Tape Deck 2.*



Other Audio Connections



Use the socket on the back of the receiver to connect the power supply of any audio components. By pressing the POWER switch on the remote control, you can turn the receiver, and all connected components, on or off at the same time.

In the United States, AC outlets have a capacity of 150 watts.

⚠ **CAUTION!** Do not connect any components that consume more power than the AC outlets capacity. This capacity is indicated below the socket on the back of the receiver.

Connecting Speakers

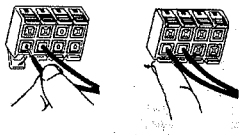
Before Starting

Up to four speakers (two sets) can be connected to the receiver. Connecting four speakers will allow you to use the built-in Surround feature.

Connecting Speakers

Connect speakers to the SPEAKERS terminals on the back of the receiver. Use the wire supplied with the speakers.

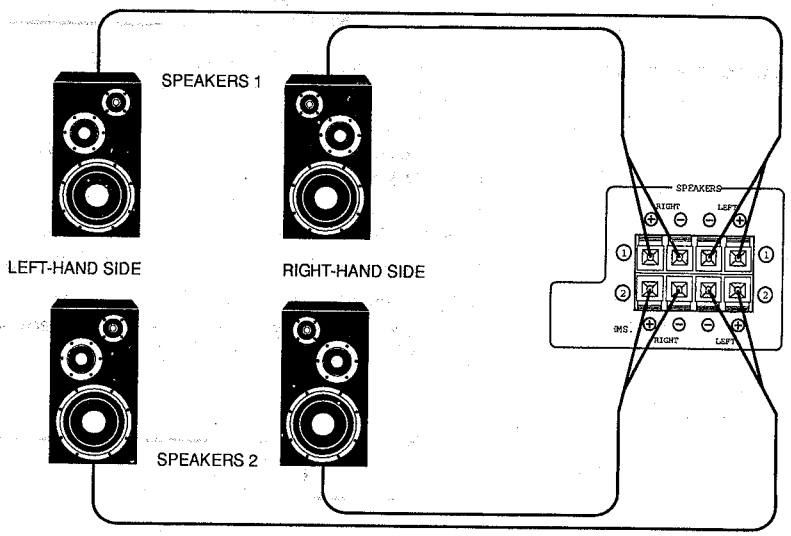
To connect each speaker, follow these steps:



Step 1 Open each terminal on the back of the receiver and insert the end of the speaker wire, as shown.

Step 2 Close the terminals to clamp the speaker wires in place, as shown.

⚠ **CAUTION!** Use speakers with an impedance of 8 ohms.



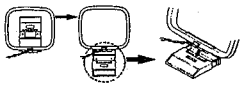
Connecting an AM Antenna

Before Starting

One AM loop antenna is supplied with your receiver.

Basic Connections

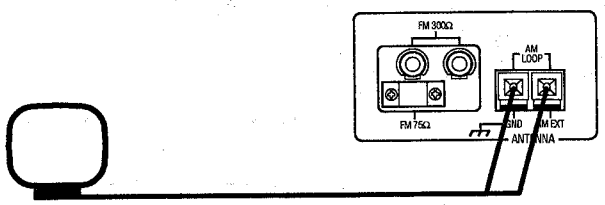
To connect the AM loop antenna to the AM LOOP terminals, follow these steps:



Step 1 Open each terminal and insert one of the two ends of the AM antenna wire.

Step 2 Close the terminals to clamp the antenna wires in place.

Step 3 Stand the AM loop antenna on its own base, as shown. Set it on any flat surface.



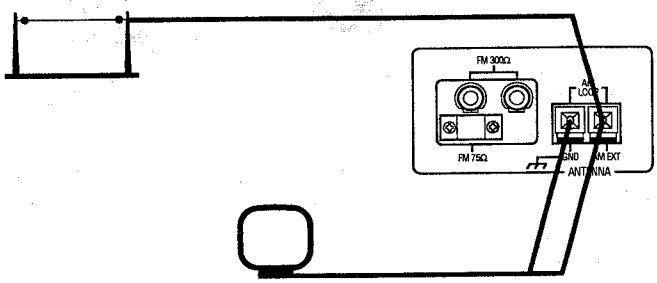
AM Outdoor Antenna

If your AM broadcast reception is unsatisfactory, you should connect an AM outdoor antenna in addition to the loop antenna. The antenna wire should be 16 to 40 feet (5 to 13 meters) long.

Connect one end of the outdoor single vinyl-covered antenna wire to the AM LOOP terminal marked AM EXT.

IMPORTANT! *The AM loop antenna must be installed to receive AM broadcasts. Do not disconnect the loop antenna when installing an outdoor antenna.*

IMPORTANT! *Except for the connection, make sure no uninsulated antenna wire touches the rear panel of the receiver. Otherwise, the receiver might not pick up AM broadcasts.*



Connecting an FM Antenna

Before Starting

A temporary FM antenna and cable is supplied with your receiver. If reception with this antenna is not satisfactory, you may consider purchasing a 300-ohm feeder-cable antenna or a 75-ohm coaxial-cable antenna:

⚠ **CAUTION!** Before connecting the new FM antenna, disconnect any other FM antenna.

Connecting the Temporary FM Antenna

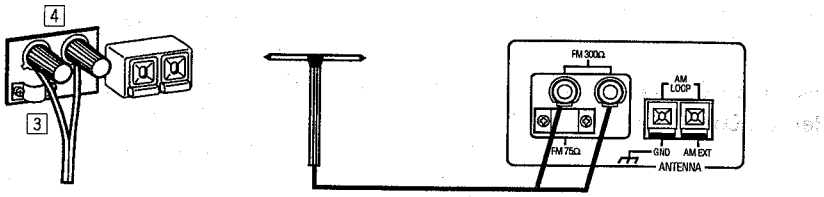
To connect the supplied antenna, follow these steps:

Step 1 Loosen the cap on the 300/75-ohm terminal on the back of the receiver.

Step 2 Loosen the cap on the 300-ohm terminal on the back of the receiver.

Step 3 Connect the antenna by inserting one wire behind each cap.

Step 4 Tighten the caps on both terminals.



Connecting a 300-Ohm FM Antenna

To connect a 300-ohm feeder-cable antenna, use the same steps as for the temporary FM antenna.

Connecting a 75-Ohm FM Antenna

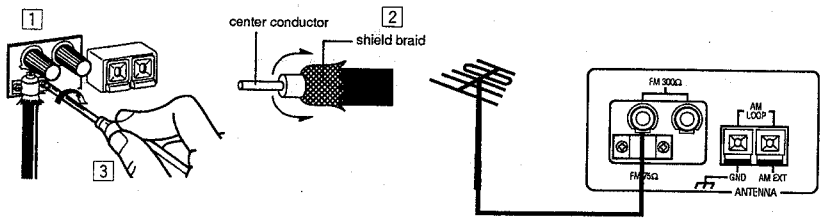
To connect a 75-ohm coaxial-cable antenna, follow these steps.

Step 1 Unscrew the cap and bracket screw on the 300/75-ohm terminal. Insert the round antenna cable from below.

Step 2 Make sure the shield braid on the cable contacts the bracket, and the center conductor of the cable contacts the 300/75-ohm terminal.

Step 3 Tighten the bracket screws and the cap on the 300/75-ohm terminal.

IMPORTANT! *Make sure the antenna conductors do not touch any other terminals on the receiver. This could cause poor reception.*



Connecting the Power

Connecting the Power Supply

After checking all connections, insert the power cord plug into an outlet.

When the power supply is connected correctly, the POWER STANDBY indicator lights on the front of the receiver. A small amount of power (5 watts) is consumed under these conditions, even if the receiver is turned off. To shut off the power completely, unplug the power cord from the outlet.

⚠ **CAUTION!**

- Do not handle the power cord with wet hands.
- Do not pull on the power cord to unplug the receiver. Always grasp the plug directly so as not to damage the cord.
- Do not plug the power cord into a socket until all components are connected correctly.

IMPORTANT! *If the power cord is disconnected or a power failure occurs, the receiver settings in memory are retained for 2 or 3 days.*

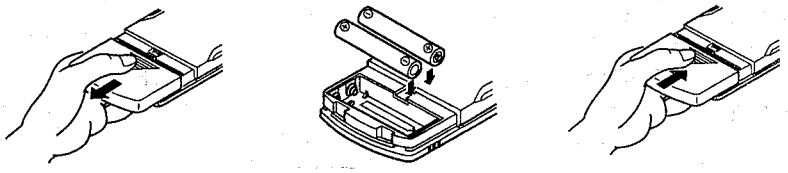
Inserting Batteries into the Remote Control

The remote control requires two batteries (supplied). To insert batteries, follow these steps:

Step 1 On the back side of the remote control, press down on the battery cover and slide it out.

Step 2 Insert batteries. Make sure to observe the proper polarity: (+) to (+) and (-) to (-).

Step 3 Slide the cover in.



Replacing Batteries

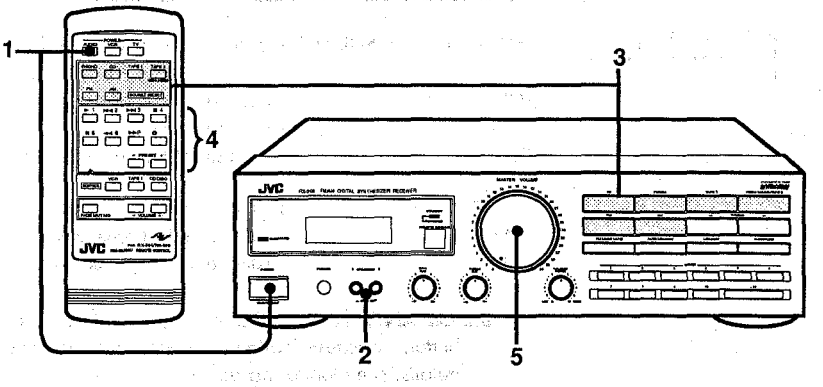
If the range or effectiveness of the remote control decreases, replace the batteries. Use two (2) AAA (24F) dry-cell batteries of the R03/UM-4 type.

⚠ **CAUTION!** Follow these precautions to avoid leaking or cracking cells:

- Place batteries in the remote control so they match the polarity indicated (+) to (+) and (-) to (-).
- Use the correct type of batteries. Batteries that look similar may differ in voltage.
- Always replace both batteries at the same time.
- Do not expose batteries to heat or flame.

Operation Outline

Basic Operation Reference



[1] Turn on the power

Push the POWER switch to turn on the receiver. The display lights:

NOTE: Pushing the POWER switch again turns off the power and lights the STANDBY light.

[2] Select speakers (page 16)

Use the SPEAKERS switch to choose between the two sets of speakers. To use your headphones, insert the headphone plug into the PHONES jack on the receiver.

[3] Choose an audio source (page 12)

To choose an audio source, press one of the SOURCE selector buttons on the receiver or select one of the components on the remote control.

[4] Operate the audio source (pages 18-20)

Refer to the manual provided with each component. If your JVC components are connected to the COMPU LINK jack of the receiver, you can operate them using the remote control.

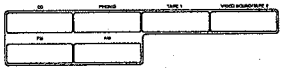
[5] Adjust volume and tone (pages 16-17)

Rotate the MASTER VOLUME control on the receiver or press the VOLUME button on the remote control to adjust volume. See page 16 for other ways to change the volume or tone.

Selecting the Audio Source

The receiver can receive input from compact discs, cassette tapes, turntables, or any audio source that you connect. You can select a source for either listening or recording.

Listening

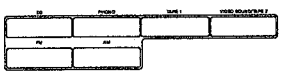


Press one of the SOURCE buttons on the receiver or the remote control.

CD	Listen to the CD player.
PHONO	Listen to a record.
TAPE 1	Listen to the tape deck connected to the TAPE 1 jacks.
VIDEO SOUND/ TAPE 2	Listen to the tape deck connected to the TAPE 2 jacks.
FM	Listen to an FM broadcast.
AM	Listen to an AM broadcast.

IMPORTANT! *The TAPE 2 button has a different function from other source selector buttons, because it allows you to monitor the quality of the recording. For more details, see Monitoring below.*

Recording



The source being played is automatically selected as the source to be recorded. While recording, you can listen to the selected source at any desired volume and tone settings.

NOTE: Volume and Tone adjustments do not affect recording.

IMPORTANT! *When recording from TAPE 2 to TAPE 1, press the VIDEO SOUND/ TAPE 2 button and another button other than TAPE 1.*

Monitoring

Using the Monitor feature, you can compare the sound quality of the source to the sound quality of the recording being made.

To use the Monitor feature while recording onto a cassette deck connected to the TAPE 2 jacks, follow these steps:

Step 1 Press the TAPE 2 button.

The "TAPE 2 MONITOR" light appears and you can listen to the sound of the cassette deck connected to the TAPE 2 jacks. You are now hearing the quality of the recording, not the quality of the source.

Step 2 Press the TAPE 2 button again.

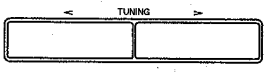
This turns off the "TAPE 2 MONITOR" light, and the speakers play the previously selected source.

NOTE: If the cassette deck has three heads, you can hear the sound of the recording at the same time as it records on the tape.

Receiving an AM/FM Broadcast

To receive an AM/FM broadcast, select either AM or FM using the AM/FM button. Then tune to the precise frequency using the TUNING buttons.

Tuning



Tune to the frequency of a desired station using the TUNING buttons. Pressing the right button increases the frequency, and pressing the left button decreases the frequency. Tapping the TUNING button once changes the frequency in steps of 10 kHz for AM and 0.1 MHz for FM.

There are two tuning modes: Manual and Automatic.

Manual Tuning

If you know the frequency of a desired station, hold down the TUNING button to start the frequency changing quickly. Release the TUNING button near the desired station and tap it repeatedly until you arrive at the correct frequency.

Automatic Tuning

If you want to scan frequencies for a desired station, hold down the TUNING button to start the frequency changing quickly. When you release the TUNING button, the frequency continues to change until it reaches a station.

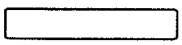
When a station is correctly tuned, the "TUNED" light appears on the display window.

Once a tuned frequency is preset, it can be directly recalled using the TUNER buttons. For details, see page 14.

NOTE: When you use automatic tuning, weak stations are ignored. To pick up weak stations, use manual tuning.

IMPORTANT! *If the receiver is tuned to a station but the "TUNED" light does not appear, try adjusting the antenna for better reception.*

Selecting an FM Reception Mode



Pressing the FM MODE-MUTE switch switches between these modes.

The "MUTE-AUTO" light appears on the display window. You hear either stereo sound or monaural sound, depending on the broadcast. If it is a stereo broadcast, the "STEREO" light appears. This mode is also useful for suppressing static "noise" between stations.

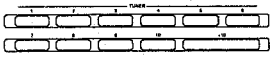
The "MUTE-AUTO" light disappears. You hear monaural sound even if a broadcast is in stereo. This mode is also useful when a stereo broadcast is noisy because of a weak signal.

NOTE: Using the Automatic Tuning mode, the sound of a broadcast with a weak signal may be muted. In this case, select the monaural mode.

Presetting Tuned Frequencies

You can preset up to 40 radio stations by assigning channel numbers (1 through 40) to them. Once a station is preset, you can listen to it by entering the preset number using the TUNER buttons on the receiver, or the PRESET buttons of the remote. There are two ways to preset: manual or automatic.

Assigning Channel Numbers



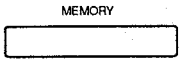
To choose numbers from 1 through 10, press the appropriate TUNER buttons. To choose numbers from 11 through 40, press the +10 key and one other button. For example:

To choose 17	Press +10, then 7.
To choose 20	Press +10, then 10.
To choose 25	Press +10 twice, then 5.
To choose 40	Press +10 three times, then 10.

Your channel number will appear as shown at the left.

NOTE: You can also tune using the remote control. First press the AM or FM button on the remote, then enter the channel number using the PRESET buttons (+ and -) on the remote. Press + to raise the selected number, and press - to lower the selected number.

Manual Presetting



To use manual presetting to assign channel numbers to your favorite stations, follow these steps:

Step 1 Tune to a station. If necessary, follow the procedure on page 14.

Step 2 Press the MEMORY button.

The "MEMORY" light appears in the display window.

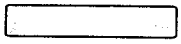
Step 3 Using the TUNER buttons, enter a number (1 through 40). This number is the channel number you are assigning to the station.

IMPORTANT! *You must enter the channel number while the "MEMORY" light is on. You have about 5 seconds to do this. If the light disappears before you enter the channel number, press the MEMORY button again.*

Step 4 When the MEMORY light disappears and the channel number is displayed, presetting is completed.

Automatic Presetting

AUTO MEMORY



To use automatic presetting to preset up to 40 stations automatically, follow these steps:

Step 1 Press the SOURCE selector button to select AM or FM.

Step 2 Using the TUNING buttons, move to the lowest frequency on the dial.

Step 3 Press the AUTO MEMORY button.

The "MEMORY" light flashes in the display window.

Step 4 Using the TUNER buttons, enter a channel number (1 through 40) to the first tuned station. From that point, scanning starts and stations are assigned channel numbers in ascending order.

IMPORTANT! *You must enter the channel number while the "MEMORY" light flashes. If this light disappears before you enter the channel number, press the AUTO MEMORY button again.*

Excluding a Station From Automatic Presetting

Frequencies are scanned in ascending order. When a station is tuned in, scanning stops and the "TUNED" light appears. The station is preset about 4 seconds later and the "MEMORY" light flashes again. If you do not want to preset this station, press the AUTO MEMORY button within 4 seconds. Scanning restarts without presetting that station.

When the "MEMORY" light flashes again, scanning continues until one of the following occurs:

- Another station is tuned in
- The upper limit of the tuning range is reached
- All 40 channel numbers have been assigned

When Auto Presetting is completed, the last preset station is received.

NOTE: To stop scanning at any time, press either TUNING button once.

Adjusting the Volume and Tone

Adjusting the Volume

Using the MASTER VOLUME Control

Use the MASTER VOLUME control to adjust the volume from the left and right speakers. Rotating the dial to the right increases the volume. The volume from the speakers and the headphones increases simultaneously.

NOTE: Volume can also be adjusted using the remote control. Press the VOLUME button marked + to increase the volume, or the VOLUME button marked - to decrease the volume.

⚠ **CAUTION:** Listening to extremely loud sound may damage your hearing. Be especially careful when using headphones.

Muting the Sound

Press the FADE MUTING button on the remote control to decrease the volume quickly when you receive a phone call or a visitor.

***IMPORTANT!** If you are listening at very high volume, you may need to press FADE MUTING a second or third time to reduce volume completely.*

Selecting the Speakers

Pushing in SPEAKER button 1 or 2 activates that pair of speakers. Pressing either button again deactivates that pair of speakers. When the button is in, that pair is activated. You can listen to both pairs, pair 1, pair 2, or neither pair.

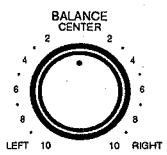
***IMPORTANT!** If only one set of speakers is connected, pressing "in" both speaker buttons will produce no sound.*

Listening to Headphones

Insert the headphone plug into the PHONES jack. To limit sound to the headphones (no sound from the speakers), press SPEAKER buttons 1 and 2 to deactivate all speakers.

⚠ **CAUTION:** To avoid hearing damage, turn the volume down before plugging in the headphones, then gradually increase the volume.

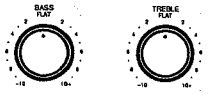
Adjusting the Left-Right Balance



Use the BALANCE control to adjust the balance between the left and right channels. Rotating the dial to the right increases the right-channel volume, and rotating it to the left increases the left-channel volume. The BALANCE control affects both sets of speakers and the headphones.

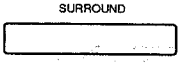
Adjusting the Tone

Adjusting Bass and Treble



Use the BASS control to adjust low pitches and the TREBLE control to adjust high pitches. Turn either control to the right for intensified pitch. Set both controls at the FLAT position for normal listening.

Enjoying the Surround Sound Effect



When you are using four speakers, you can put them in different corners of the room and use the Surround feature. Press the SURROUND button to create this movie-theater effect. The SURROUND indicator lights on the display window. Press the SURROUND button again to deactivate the surround feature. The SURROUND indicator turns off.

IMPORTANT! *The Surround feature has no effect on monaural (non-stereo) sources.*

NOTE: Two set of speakers are recommended to produce an ideal surround effect, but you can use the feature with only one set of speakers connected.

Operating Audio Components

COMPU LINK Remote Control System

COMPU LINK Remote Control System

The COMPU LINK remote control system lets you operate the receiver and JVC components from the remote supplied with this receiver. Control signals for JVC audio components are preset in the receiver's remote control.

Connecting the COMPU LINK SYNCHRO-3 jacks on the back of the receiver will allow you to use the four functions below.

Remote Control

You can control all components via the REMOTE SENSOR on the receiver using the receiver's remote control. For details, see page 19.

***IMPORTANT!** Point the remote control directly at the REMOTE SENSOR on the receiver.*

Automatic Source Selection

When you *press play* on a component or the remote, the component begins playing immediately. On the other hand, if you select a *new source* on the receiver or the remote, the component begins playing immediately, but the previously selected source continues playing without sound for a few seconds.

Synchronized Recording

Synchronized recording means the tape deck starts recording as soon as a CD or record begins playing.

To use synchronized recording, follow these steps:

Step 1 Put a tape in the deck, and a disc in the CD player or on the turntable.

Step 2 Press the REC and PAUSE button on the tape deck at the same time. This puts the tape deck in the REC/PAUSE state.

***IMPORTANT!** If you do not press the REC button and PAUSE button together, the synchronized recording feature will not operate.*

Step 3 Press the PLAY button on the CD player or turntable.

As soon as the disc starts playing, the tape deck starts recording. When the disc ends, the tape deck switches back to the REC/PAUSE mode, and stops 4 seconds later.

NOTES:

- *During synchronized recording, the CD or PHONO button is activated. Other SOURCE buttons are disabled to prevent recording failure.*
- *If your CD player is operated in the PROGRAM mode, a 4-second mute is recorded between tracks to enable the music scan feature of your tape deck to work.*
- *If the power of any component is shut off during synchronized recording, the system will not operate properly. In this case, you must start again with step 1.*

Automatic Power ON/OFF

The CD player and cassette deck are turned on and off along with the receiver.

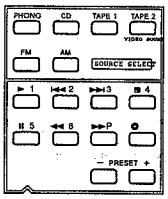
NOTE: This function has been added to COMPU LINK-3 (Enhanced COMPU LINK), an upgraded version of COMPU LINK-1. Refer to your JVC component manual for details.

Using the Remote Control

By connecting the COMPU LINK jack to this receiver, you can operate the audio stereo component with this receiver's remote control. In addition, if your VCR is a JVC product, you can operate it with this receiver's remote control.

NOTE: The VCR does not work with the COMPU LINK remote control system. When you operate the VCR, you must aim the remote control at the VCR instead of the receiver.

Operating the Component Already Selected



Select a source with the SOURCE SELECT buttons on the remote control. Operate that source using the buttons just below the SOURCE SELECT buttons.

***IMPORTANT!** If you choose a source on the receiver directly, the remote control will not operate that source. To operate a source with the remote control, the source must be selected using the remote control.*

***IMPORTANT!** Pressing the TAPE 2 button does not change the operation mode of the remote control. When you want to operate the cassette deck, press the TAPE 1 button first.*

Turntable

After pressing the PHONO button, you can perform the following operations on the remote:

►	Starts playing
■	Stops playing

CD Player

After pressing the CD button, you can perform the following operations on the remote:

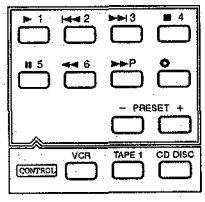
►	Starts playing
⏮	Skips to the beginning of the previous track
⏭	Skips to the beginning of the next track
■	Stops playing
II	Stops playing temporarily. To release it, press ►
◄◄	Moves backward quickly during play
►►	Moves forward quickly during play

Cassette Deck

After pressing the TAPE 1 button, you can perform the following operations on the remote:

►	Starts playback
⏮	Skips to the beginning of the previous tune
⏭	Skips to the beginning of the next tune
■	Stops operation
II	Stops playback or recording temporarily. To release it, press ►
◄◄	Fast wind the tape from right to left
►►	Fast wind the tape from left to right
o	Press together with ► to start recording Press together with II to enter record-standby mode

Operating the Component Not Currently Selected



When you want to operate one component while listening to another component (e.g., recording from a CD), use the buttons in the CONTROL section of the remote control. The CONTROL buttons allow you to use the operation buttons for the new component without affecting the component already playing.

VCR

After pressing VCR (in the CONTROL section of the remote control), you can perform the following operations on the remote:

►	Starts playback
I◄◄	Skips to the beginning of the previous tune
►►I	Skips to the beginning of the next tune
■	Stops operation
II	Stops playback temporarily or freezes the picture. To release it, press ►
◄◄	Rewinds video tape
►►	Fast winds video tape
o	Press together with ► to start recording Press together with II to enter record-standby mode

IMPORTANT! *Aim the remote control at the VCR, not at the receiver.*

NOTE: *You can also turn the VCR and TV on and off by pressing the VCR or TV button in the POWER section of the remote control.*

Cassette Deck

Pressing TAPE 1 in the CONTROL section of the remote allows you to perform the same functions as pressing TAPE 1 in the SOURCE SELECT section of the remote.

CD Player-Changer

After pressing the CD DISC button in the CONTROL section of the remote, you can perform the following operations on the remote:

1-6, P Select the number of the disk installed in the CD player-changer

Troubleshooting

Use this chart to help you solve everyday operational problems. If there is any problem you cannot solve, contact your JVC service center.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Display window does not light up	Power cord not plugged in	Plug power cord into AC socket
No sound from speakers	Speaker wires not connected	Check speaker wiring and reconnect if necessary
	SPEAKERS buttons not set correctly	Push the SPEAKERSbuttons in or out as desired
	Incorrect SOURCE button was pressed	Select the correct audio source
Sound from one speaker only	Speaker wires not connected properly	Check speaker wiring and reconnect if necessary
	Balance control is set to one extreme	Adjust BALANCE control so that both speakers have sound
Continuous hiss or buzzing during FM reception	Incoming signal is too weak	Adjust antenna
	Station is too far away	Select a new station
	Incorrect antenna used	Check with your dealer to be sure you have the correct antenna
	Antenna not connected properly	Check connections
Occasional cracking noise during FM reception	Ignition noise from automobiles	Move the antenna farther from automobile traffic
Howling during record playing	Turntable too close to speaker	Move speakers away from turntable
Remote control does not work	There is an obstruction in front of the REMOTE SENSOR on the receiver	Remove the obstruction
	Batteries are weak	Replace batteries

Specifications

Receiver

Output Power	**100 watts per channel, min. RMS, both channels driven into 8 ohms from 40 Hz to 20 kHz, with no more than 0.08 % total harmonic distortion.**
Total Harmonic Distortion (8 ohms, 1 kHz)	0.08 %* at 90 watts output
Intermodulation Distortion	0.08 % at 90 watts output
Frequency Response (8 ohms)	
PHONO	20 Hz to 20 kHz (±1 dB)
CD / TAPE 1 / TAPE 2	20 Hz to 20 kHz (±1 dB)
Signal-to-Noise Ratio ('66 IHF / '78 IHF)	
PHONO	70 dB / 78 dB (REC OUT)
CD / TAPE 1 / TAPE 2	91 dB/ 80 dB
RIAA Phono Equalization	±1 dB (20 Hz to 20 kHz)
Input Sensitivity / Impedance (1 kHz)	
PHONO	2.5 mV / 47 k ohms
CD / TAPE 1 / TAPE 2	200 mV / 47 k ohms
Output Level	
TAPE 1 / TAPE 2	200 mV
Tone Control Range	BASS (at 100 Hz) ±8 dB TREBLE (at 10 kHz) ±8 dB

FM Tuner (IHF)

Tuning Range	87.5 MHz to 108.0 MHz
Usable Sensitivity	10.8 dBf (0.95 µV / 75 ohms)
50 dB Quieting Sensitivity	
Monaural	16.3 dBf (1.8 µV / 75 ohms)
Stereo	38.3 dBf (22.5 µV / 75 ohms)
Signal-to-Noise Ratio (IHF-A weighted)	
Monaural	80 dB at 85 dBf
Stereo	73 dB at 85 dBf
Total Harmonic Distortion	
Monaural	0.15 % at 1 kHz
Stereo	0.2 % at 1 kHz
Stereo Separation at REC OUT	40 dB at 1 kHz

Capture Ratio	1.5 dB (10 mV / 300 ohms)
Alternate Channel Selectivity	60 dB: (±400 kHz)
Frequency Responce	30 Hz to 15 kHz: (+0.5 dB, –3 dB)

AM Tuner

Tuning Range	530 kHz to 1,710 kHz
Usable Sensitivity	
Loop antenna	300 μV/m at 1,000 kHz
External antenna	30μV at 1,000 kHz
Signal-to-Noise Ratio	50 dB (100mV / m, at 1,000 kHz)
Selectivity	25 dB (±10 kHz)

General

Power Requirements	AC 120V∿, 60 Hz
Power Consumption	220 watts, 310 VA
Dimensions (W x H x D)	17-3/16 x 5 x 13-7/16 inches 435 x 126 x 341 mm
Weight	17.7 lbs (8.0 kg)

*Measured by JVC Audio Analysis System.

Designs and specifications subject to change without notice.

For Universal

AMPLIFIER SECTION

Output power	70watts per channel, min. RMS,both channels driven into 8 ohms at 1kHz with no more than 0.9% total harmonic distortion (IEC268-3/DIN) 2×70W, 8 ohms,40Hz to 20kHz with 0.08% total harmonic distortion
Total harmonic distortion (1kHz, 8 ohms)	0.08%* at 70watt output
Intermodulation distortion	0.08% at 70watt output, 8 ohms

For Europe,UK,Australia

AMPLIFIER SECTION

Output power	70watts per channel,min.RMS,both channels driven into 4 ohms at 1kHz with no more than 0.9% total harmonic distortion(IEC268-3/DIN). 50watts per channel.min.RMS,both channels driven into 8 ohms at 1kHz with no more than 0.9% total harmonic distortion(IEC268-3/DIN) 2×45W, 8 ohms,40Hz to 20kHz with 0.08% total harmonic distortion
Total harmonic distortion (1kHz, 8 ohms)	0.08%* at 45watt output
Intermodulation distortion	0.08% at 45watt output, 8 ohms